

# THE RUNDOWN

## WATER. ENERGY. MATERIALS. NEWS.

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From the office of the Environmental Coordinator, 73 Harlow Street, Bangor, ME 04401  
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## City Receives Stimulus \$\$\$ to Improve Water Quality

By John Murphy

Bangor has been offered \$2.8 million in American Recovery and Reinvestment Act Funding to undertake projects that will address stream impairments associated with stormwater runoff.

Rainwater moving across the ground often picks up loose soil, fertilizers, pesticides, heat from roofs and paved areas, spilled gasoline, pet wastes, and other materials. These materials are washed into brooks and streams where they reduce the quality of the water. This is called water quality impairment.

The Maine Department of Environmental Protection has identified five streams in Bangor as impaired. They are Penjajawoc Stream, Birch Stream, Arctic Brook, Capehart Brook, and Shaw Brook.

Since 2003, Bangor has been addressing issues affecting Birch Stream and Penjajawoc Stream. Watershed Management Planning activities have identified a number of projects that can be undertaken to reduce stormwater contamination and otherwise improve water quality in these streams.

In the Birch Stream watershed located in and around Bangor International Airport,

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\$1.69 million will fund storm drain upgrades, installation of natural treatment systems, and removal of some unused paved areas.

In the Penjajawoc Watershed located in and around the Bangor Mall, \$877,000 will fund Stream bed and bank restoration, tree planting, storm drain upgrades, installation of natural treatment systems, and runoff improvements.

Finally, \$270,000 will fund a new high-performance street sweeper and stream monitoring equipment that will allow the City to gather the data needed to develop and implement plans to improve water quality in the impaired streams.



## Stream Clean-ups Planned for the Region

By Mark Ward

With the huge surge in environmental awareness, the City of Bangor is expecting a strong turn out for the annual Regional Stream Clean-up sponsored by the Bangor Area Storm Water Group. This year Bangor will participate in a joint clean-up effort with the Maine Audubon Society during Earth Day week, on April 25<sup>th</sup> from 1 p.m. to 3p.m. on the Penjajawoc Stream. The second cleanup event will take place on Birch Stream on Saturday, May 16<sup>th</sup> from 8 a.m. to 11a.m.

Both streams have been designated by the Maine Department of Environmental Protection (DEP) and United States Environmental Protection Agency (EPA) as Urban Impaired Streams because they do not meet water quality standards.

The City of Bangor is working closely with Maine DEP, EPA, various environmental and citizens groups, and property owners within the watersheds to formulate a plan to minimize or eliminate pollution in these streams in order to meet water quality goals set by the State. This event is expected to help raise awareness about the value of our streams and the impact that litter, soils, and pollutants from parking lots, streets, and sidewalks has on them.

***Join the Clean-up and receive a free t-shirt!!!***

Clean-up events will also occur in Brewer (May 16); Hampden (May 9); Old Town (May 11-15); Orono (May 16), Milford (May 30), Veazie and at the University of Maine, Orono (April 29).

## Fire Station 6 is in the LEED

By Wendy Warren

The City of Bangor was the first municipality in the State to adopt Leadership in Energy and Environmental Design (LEED) standards for City projects. The new Fire Station 6 under construction on Griffin Road, is the first project undertaken under this policy.

LEED is a third-party certification program and the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: 1) sustainable site development; 2) water savings; 3) energy efficiency; 4) materials selection; and 5) indoor environmental quality.

Fire Station 6 will be LEED certified and may reach the second level of attainment - Bronze. LEED is based on a system of points earned for meeting various standards. As those points increase, they reflect a level of achievement that distinguishes a project from others .

Tours of the Fire Station and it's LEED features will be available by appointment when the Station opens in April 2009. Contact Captain Tony Ritano at 992-4690 to make arrangements.

## Exploring Funding Options - Stormwater Utilities

By Wendy Warren

Faced with the daunting task of cleaning up five impaired streams, Bangor City staff and stakeholders are contemplating ways to help fund new programs and new construction that will be needed. New rules and regulations have resulted in increased street sweeping, catch basin cleaning, spill prevention training and tools, culvert and outfall maintenance, in-stream maintenance and riparian improvements. Watershed management plans call for installation of new stormwater treatment systems on private and public lands where there are outdated systems or none at all.

One funding option that works well in many areas throughout the United States is a stormwater utility district. Such districts assess fees based upon impervious cover for the purpose of improving water quality. The City and several neighboring communities are taking a close look at this funding mechanism. The State of Maine Planning Office has a Model Stormwater Utility Ordinance available on line at <http://www.maine.gov/spo/coastal/docs/nonpoint/MEstormwaterutility.pdf>

On June 13, 2008, the Maine Department of Environmental Protection and the Bangor Area Storm Water Group hosted an introductory training session on Stormwater Utilities. State funding then allowed the City to contract with CH2MHill to update a 1994 Rate Feasibility Analysis that will provide a snapshot of how much revenue could be generated and what projects could be supported. That update is expected to be completed this month. Another workshop is planned for May to discuss whether or not a stormwater utility is a viable option for Bangor. A limited number of representative stakeholders will be invited to attend this interactive and in-depth workshop.

## Recycling - Another Way to Commit to the Environment

By Jerry Hughes

In today's world, we hear terms like go green, reduce, reuse, and recycle. Each of these ideas requires a commitment – one that Bangor has had, and continues to have -- to the environment.

In 2008, Bangor's Regional Recycling Processing Center took in more than 5,800 tons of recyclables from commercial haulers and 33 communities. Approximately 1,328 tons of newspapers, 3,684 tons of cardboard, plus # 2 plastics, tin cans, glass, and office paper were processed at the facility and shipped to end users where these recyclables are turned into new products.



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Recycling...continued from page 3

In addition to Bangor's recycling program, Household Hazardous Waste is collected each year on the first Saturday of October. On October 4 2008, residents from Bangor and 20 neighboring communities dropped off over 12 tons of hazardous waste including oil based paints, corrosives, and pesticides. Residents also delivered 505 televisions, 428 computer monitors, and 3,476 used fluorescent light bulbs.

Recycling is one of the many ways that Bangor has chosen to help the environment. Bangor's regional concept for recycling and hazardous waste has also allowed neighboring communities to address their environmental concerns. We care; we are committed; and, yes, we set a good example.

The next Household Hazardous Waste Collection will be held on October 3, 2009 at the Bangor Public Works facility, 530 Maine Avenue. Call 992-4500 for more info.



## City Council Focuses on Non-Point Source Pollution

By Paul Nicklas

The Bangor City Council's Infrastructure Committee (IC) recently held two workshops to become familiar with non-point source pollution and the impact it has on government operations and the community.

On March 11, LaMarr Cannon of Non-point Education for Municipal Officials (NEMO) gave a presentation on non-point source pollution, addressing the contribution of stormwater to impairment of urban streams. Wendy Warren, Bangor's Environmental Coordinator, followed by describing the regulatory mechanisms that the Environmental Protection Agency and Maine's Department of Environmental Protection can use to address impairment.

At the second workshop on April 1, Warren discussed the components of a watershed management plan. A watershed management plan is a comprehensive approach to helping a stream meet water quality goals set by the State.

Assistant City Solicitor Paul Nicklas described the importance of involving community members and other stakeholders in the planning effort. Nicklas led the Committee through a review of a Draft Citizen Review Panel Charter, an outline for a formal stakeholder group for the Penjajawoc watershed. Councilors and stakeholders agreed on several changes. City staff will seek consensus on the rest of the charter and then bring it before the full Council for approval.

## Stream Team Report - Chlorides

### **Extract from the Draft Penjajawoc Stream Summary of Water Quality Data from the 2008 Field Season**

By Mark Whiting, Department of Environmental Protection

DEP has been monitoring Penjajawoc Stream since 1997 (DEP 2007). In the fall of 2007, the City of Bangor and the DEP collaborated in the organization, training, and equipping of a volunteer Stream Team to follow up on these earlier studies. The purpose of the Stream Team monitoring is to demonstrate progress as the City and its private landowner partners implement stormwater management improvements. Current sampling by the volunteers is helping to provide much needed baseline information from which to measure future improvements.

Volunteers measure water temperature, dissolved oxygen (DO), and specific conductance or total dissolved solids (TDS), and *Escherichia coli* (*E. coli*) bacteria. Samples are taken for turbidity analysis any time the water looks muddy. In the fall of 2007 and in the spring of 2008 samples were collected after storm events whenever there was at least an inch of rain recorded at the Bangor International Airport. In the summer of 2008, volunteers collected weekly samples. Finally, in the fall of 2008, sampling was scaled back to once per month.

### **Conductivity Reflects High Chlorides**

Maine does not have numerical water quality criteria for conductivity or TDS, but the narrative standard that water quality be adequate to support natural aquatic communities applies. New Hampshire's Department Environmental Services (DES) also has no numerical standard, but DES does consider streams with chronic conductivity exceeding 501 uS to be "highly impacted" (DES 2008). DES further notes that conductivity is generally closely related to chloride concentration and that any conductivity greater than 850 uS is likely to exceed the state chloride standard for chronic exposure of 230 mg/L. Maine uses the same chloride standard and only the lowest Penjajawoc site (PJS-1) and Meadow Brook appeared to exceed this standard.

Table 4. Specific Conductance Values from Volunteer Collections

	No. values	Median	Range
PJS-6			
PJS-5	5	113 uS	99-113 uS
PJS-4	5	155 uS	85-268 uS
PJS-4b	20	250 uS	84-510 uS
PJS-3	27	410 uS	146-800 uS
PJS-2	23	523 uS	165-4254 uS
PJS-1	15	593 uS	189-3200 uS
MB-1	23	1307 uS	565-1583 uS
CB-1	15	311 uS	135-382 uS

Table 4 values are in micro-Siemens (uS) per cm. The sample sites are arranged from the upper watershed to the lower, and the two major tributaries are listed



The table above illustrates a general trend from low conductivity to high as one travels lower in the watershed (Table 4). Background specific conductance is probably about 113 uS based on the uppermost site. The seasonal character of the conductance spikes indicate that winter salt is likely the predominant source. Salt also soaks into the ground and is released gradually through the spring and summer. The strongest salt sources in the watershed appear to be the interstate highway I-95 and development along Hogan Road, most easily seen in the maximum values. Based on median values, Meadow Brook appears to be more strongly influenced by salt (median 1307 uS) than the larger Penjajawoc Stream (median 523 uS at PJS-2), but the Penjajawoc has the most extreme values. Cemetery Brook had very low conductivity, likely due a lack of large parking areas and fewer busy roads. Additional conductance testing was accomplished with data sondes resulting in similar trends being documented.

For the full 2008 report, contact Mark Whiting at (207) 941-4566 or e-mail him at [mark.c.whiting@maine.gov](mailto:mark.c.whiting@maine.gov).

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